

Remarks

Reconsideration and withdrawal of the rejections set forth in the above-mentioned Official Action in view of the foregoing amendments and the following remarks are respectfully requested.

Claims 1, 3, 4 and 6-23 are now pending in the application, with Claims 1, 3, 4, 6, 7, 15 and 20 being independent. Claims 2 and 5 have been cancelled without prejudice. Claims 1, 3, 4, 6, 7 and 9-23 have been amended herein.

Claims 1-15 were rejected under 35 U.S.C. § 102 as being anticipated by U.S. Patent No. 6,596,988 (Corso et al.). Claims 1-17 and 20-22 were rejected under § 102 as being anticipated by U.S. Patent Application Publication No. 2002/0044163 (Shigemura). Claims 1-15, 18-20 and 23 were rejected under § 102 as being anticipated by U.S. Patent No. 6,673,386 (Komyoji et al.). These rejections are respectfully traversed.

With the arrangements and methods recited in the independent claims, a discharge amount variation of a nozzle caused by nozzle crosstalk can be reduced even when certain conditions change. These can include changes in a combination of nozzles to be used, the number of nozzles to be used, presence/absence of a faulty nozzle, the direction of relative movement of the head and the medium, and a speed of relative movement of the head and the medium, or can be a change in discharging condition for adjacent nozzles.

Corso et al. describes a multiple electrospray nozzle system. By controlling the potential voltages of the fluid 268 and a substrate 200 of each nozzle, the electric field

lines emanating from the fluid exiting the nozzle 242 can be optimized. This can control the number of electrospray plumes generated.

However, Corso et al. fails to disclose or suggest at least changing the driving voltage value (or discharge amount control value) of the driving pulse in accordance with a change in at least one of conditions including a combination of nozzles to be used, the number of nozzles to be used, the presence/absence of a faulty nozzle, a direction of relative movement of the head and the medium, and a speed of the relative movement of the head and the medium, as is recited in independent Claims 1, 3, 4, 6, 15 and 20.

Nor does Corso et al. disclose or suggest changing a discharge amount control value including at least one of conditions including a voltage value and a pulse width of a driving pulse to be supplied to a predetermined nozzle, whose liquid discharge amount can be changed in accordance with a change in a discharging condition for adjacent nozzles, as is recited in independent Claim 7.

Thus, Corso et al. fails to disclose or suggest important features of the present invention recited in the independent claims.

Shigemura relates to a manufacturing apparatus and method for making a display device panel. The panel can be formed using an ink jet recording apparatus and the amount of liquid being discharged can be controlled. This can be accomplished by adjusting intervals between preheating and heating pulses or changing the voltage value of the voltage pulses. Shigemura also describes that the resistance values of the various heaters can differ, so the voltage pulses must be adjusted for each nozzle to eject the same

amount of ink. However, Shigemura also does not disclose or suggest changing values of the driving pulse in accordance with a change in at least one of conditions including a combination of nozzles to be used, the number of nozzles to be used, presence/absence of a faulty nozzle, the direction of relative movement of the head and the medium, and the speed of relative movement of the head and the medium, or in accordance with a change of the discharging condition for adjacent nozzles. Thus, Shigemura also fails to disclose or suggest important features of the present nozzle recited in the independent claims.

Komyoji et al. relates to a method and apparatus for forming a pattern on the surface of a panel substrate by jetting out electrically charged pattern forming materials through a nozzle. Particles that reach the position of nozzle 4 are jetted to the surface of the panel substrate 3 under voltage control controlled by control electrode 4d. However, Komyoji et al. also does not disclose or suggest changing the driving voltage value or discharge amount control value in accordance with a change in the various conditions discussed above or in accordance with a change in a discharging condition for adjacent nozzles. Therefore, Komyoji et al. also fails to disclose or suggest those features of the present invention discussed above as being deficient in Corso et al. and Shigemura.

Thus, independent Claims 1, 3, 4, 6, 7, 15 and 20 are patentable over the citations of record. Reconsideration and withdrawal of the § 102 rejections are respectfully requested.

For the foregoing reasons, Applicants respectfully submit that the present invention is patentably defined by independent Claims 1, 3, 4, 6, 7, 15 and 20. Dependent Claims 8-14, 16-19 and 21-23 are also allowable, in their own right, for defining features

of the present invention in addition to those recited in their respective independent claims.
Individual consideration of the dependent claims is requested.

Applicants submit that the present application is in condition for allowance.
Favorable reconsideration, withdrawal of the rejections set forth in the above-noted Office
Action, and an early Notice of Allowability are requested.

Applicants' undersigned attorney may be reached in our Washington, D.C.
office by telephone at (202) 530-1010. All correspondence should continue to be directed
to our below-listed address.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Mark A. Williamson", written over a horizontal line.

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